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Gobeli

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(54) **METHOD AND DEVICE FOR GLUCOSE CONCENTRATION MEASUREMENT WITH SPECIAL ATTENTION TO BLOOD GLUCOSE DETERMINATIONS**

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(57) **ABSTRACT**

The concentration of glucose in the anterior chamber of an eye is non-invasively measured by guiding a beam through a polarizer (4), a quarter wave plate (6), a polarization modulator (20), and an analyzer (7). After initializing the polarizer and the analyzer to extinguish the beam, it is guided parallel to the iris (56) of the eye (50) and introduced into the anterior chamber (57), wherein it is refracted, impinges on and is reflected from the iris, and exits the anterior chamber approximately collinear with the portion (55A) of the beam incident on the anterior chamber. The beam then is guided onto a detector (10), and a sufficient signal is applied to the polarization modulator to extinguish the beam. The signal represents the glucose concentration in the patient's blood.

41 Claims, 9 Drawing Sheets

